UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/913,578	11/06/2001	Yair Oren	20568-68741	4183

26291 7590 10/04/2004

MOSER, PATTERSON & SHERIDAN L.L.P.
595 SHREWSBURY AVE, STE 100
FIRST FLOOR
SHREWSBURY, NJ 07702

EXAMINER	
WANG, QUAN ZHEN	

ART UNIT	PAPER NUMBER
2633	

DATE MAILED: 10/04/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/913,578	OREN ET AL.	
	Examiner	Art Unit	
	Quan-Zhen Wang	2633	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on *06 November 2001*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-16 and 21-24* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☐ Claim(s) *1-16 and 21-24* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *8/15/2001*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Specification

1. The disclosure is objected to because of the following informalities: abstract is missing.

Appropriate correction is required.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1 and 9-10 are rejected under 35 U.S.C. 102(b) as being anticipated by Yamamoto (U.S. Patent US 5,699,177).

Regarding claim 1, Yamamoto teaches a node for a fiber optic communication network, the node comprising a first device (fig. 13, 174) for converting a first optical signal at a first frequency carried by the network into a first electrical signal, a second device (fig. 13, 115) for demodulating from the first electrical signal first information modulated on the first optical signal, a third device (fig. 13, 116) for modulating on a second electrical signal second information, a fourth device (fig. 13, 110) for converting the second information modulated on the second electrical signal into a second optical signal at the first frequency, a fifth device (fig. 13, 109) for providing a third optical signal

at a second frequency, the third optical signal having third information modulated on it, and a sixth device (fig. 13, 103) for multiplexing the second and third optical signals and placing the multiplexed second and third optical signals on the network.

Regarding claim 9, Yamamoto teaches a node for a fiber optic communication network, the node including a first device (fig. 13, 174) for converting a first optical signal at a first frequency carried by the network into a first electrical signal, a second device (fig. 13, 115) for demodulating first information from the first electrical signal modulated on the first optical signal, a third device (fig. 13, 116) for modulating second information on a second electrical signal, and a fourth device (fig. 13, 110) for converting the second information modulated on the second electrical signal into a second optical signal at the first frequency.

Regarding claim 10, Yamamoto further teaches the node of claim 9 wherein the network further carries a third optical signal at a second frequency, further including a fifth device (fig. 13, 175) for converting the third optical signal into a third electrical signal having third information modulated on it.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5. Claims 2-8, 11-12, 21-24 are rejected under 35 U.S.C. 103(a) as being anticipated by Yamamoto (U.S. Patent US 5,699,177).

Regarding claim 2, Yamamoto further teaches the node of claim 1 wherein the network further carries a fourth optical signal at the second frequency, the apparatus further including a seventh device (fig. 13, 175) for converting the fourth optical signal into a third electrical signal. Yamamoto differs from the claimed invention in that Yamamoto does not specifically teach an eighth device for demodulating from the third electrical signal fourth information modulated on the fourth optical signal. However, Yamamoto teaches a device (fig. 13, 115) for demodulating from the first electrical signal first information modulated on the first optical signal. Therefore, it would have been obvious for one of ordinary skill in the art at the time when the invention was made to include another demodulating device for demodulating from the third electrical signal fourth information modulated on the fourth optical signal so that the node can process multiple signals simultaneously.

Regarding claim 3, Yamamoto does not specifically teach the node of claim 2 further including a ninth device for providing a fifth optical signal at a third frequency, the sixth device multiplexing the second, third and fifth optical signals and placing the multiplexed second, third and fifth optical signals on the network. However, Yamamoto teaches in fig. 2 a device (fig. 2, 193) providing a fifth optical signal at a third frequency, and device (fig. 2, 184) multiplexing the second, third and fifth optical signals and placing the multiplexed second, third and fifth optical signals on the network. Therefore, it would have been obvious for one of ordinary skill in the art at the time when the

invention was made to include in the node of claim 2 a ninth device for providing a fifth optical signal at a third frequency, the sixth device multiplexing the second, third and fifth optical signals and placing the multiplexed second, third and fifth optical signals on the network to increase the capacity of the node.

Regarding claim 4, Yamamoto differs from the claimed invention in that Yamamoto does not specifically teach the node of claim 3 wherein the network further carries a sixth optical signal at the third frequency, the node further including a tenth device for converting the sixth optical signal into a fourth electrical signal, and an eleventh device for demodulating from the fourth electrical signal sixth information modulated on the sixth optical signal. However, Yamamoto teaches a first device (fig. 13, 174) for converting a first optical signal at a first frequency carried by the network into a first electrical signal, a second device (fig. 13, 115) for demodulating from the first electrical signal first information modulated on the first optical signal, a third device (fig. 13, 116) for modulating on a second electrical signal second information. Therefore, it would have been obvious for one of ordinary skill in the art at the time when the invention was made to further include into the node in claim 3 a tenth device for converting the sixth optical signal into a fourth electrical signal, and an eleventh device for demodulating from the fourth electrical signal sixth information modulated on the sixth optical signal in order that the node can process multiple signals simultaneously.

Regarding claim 5, Yamamoto differs from the claimed invention in that Yamamoto does not teach the node of claim 1 further including a seventh device for providing a fourth optical signal at a third frequency, the sixth device multiplexing the

second, third and fourth optical signals and placing the multiplexed second, third and fourth optical signals on the network. However, Yamamoto teaches in fig. 2 a device (fig. 2, 193) providing a fifth optical signal at a third frequency, and device (fig. 2, 184) multiplexing the second, third and fifth optical signals and placing the multiplexed second, third and fifth optical signals on the network. Therefore, it would have been obvious for one of ordinary skill in the art at the time when the invention was made to include in the node of claim 1 a seventh device for providing a fourth optical signal at a third frequency, the sixth device multiplexing the second, third and fourth optical signals and placing the multiplexed second, third and fourth optical signals on the network to increase the capacity of the node.

Regarding claims 6-8, Yamamoto teaches a fiber optic network including multiple nodes (figs. 2-4). Therefore, it would have been obvious for one of ordinary skill in the art at the time when the invention was made to use the nodes in the above claims in the disclosed optical network to increase the capacity of the network.

Regarding claim 11, Yamamoto differs from the claimed invention in that Yamamoto does not specifically teach the node of claim 10 further including a sixth device for modulating fourth information on a fourth electrical signal, and a seventh device for converting the fourth information modulated on the fourth electrical signal into a fourth optical signal at the second frequency and placing the multiplexed second and fourth optical signals on the network. However, Yamamoto teach a device (fig. 13, 116) for modulating information on an electrical signal, and another device (fig. 13, 110) for converting the information modulated signal into an optical signal at the first frequency.

Therefore, it would have been obvious for one of ordinary skill in the art at the time when the invention was made to include in the node of claim 10 a sixth device for modulating fourth information on a fourth electrical signal, and a seventh device for converting the fourth information modulated on the fourth electrical signal into a fourth optical signal at the second frequency and placing the multiplexed second and fourth optical signals on the network in order to expend the capacity of the node.

Regarding claim 12, Yamamoto teaches a network includes a closed loop optical fiber, one of the first-mentioned nodes and at least one of the second nodes coupled to the closed loop optical fiber (figs. 2-4, 8).

Regarding claim 21, Yamamoto teaches a fiber optic network including multi-nodes, it is obvious that the second node can include a first device for converting a first optical signal at a first frequency carried by the network into a first electrical signal, the second node further including a second device for demodulating first information from the first electrical signal modulated on the first optical signal, the second node further including a third device for modulating second information on a second electrical signal, and the second node further including a fourth device for converting the second information modulated on the second electrical signal into a second optical signal at the first frequency.

Regarding claim 22, Yamamoto teaches a fiber optic network including multi-nodes. Yamamoto does not specifically teach to use the node of claim 3 for the disclosed network. However, it would have been obvious for one of ordinary skill in the

art at the time when the invention was made to use the node of claim 3 for the multiple nodes in the disclosed network to use multiple frequencies of optical signals.

Regarding claim 23, Yamamoto teaches a fiber optic network including multi-nodes. Yamamoto does not specifically teach to use the node of claim 4 for the disclosed network. However, it would have been obvious for one of ordinary skill in the art at the time when the invention was made to use the node of claim 4 for the multiple nodes in the disclosed network to use multiple frequencies of optical signals.

Regarding claim 24, Yamamoto teaches a fiber optic network including multi-nodes. Yamamoto does not specifically teach to use the node of claim 5 for the disclosed network. However, it would have been obvious for one of ordinary skill in the art at the time when the invention was made to use the node of claim 5 for the multiple nodes in the disclosed network to use multiple frequencies of optical signals.

6. Claims 13-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yamamoto (U.S. Patent US 5,699,177) in view of Chawki et al. (U.S. Patent US 5,576,875).

Regarding claims 13-16, Yamamoto teaches a network includes a closed loop optical fiber, one of the first-mentioned nodes and at least one of the second nodes coupled to the closed loop optical fiber (figs. 2-4, 8) carrying multiple frequency signals. Yamamoto does not teach a network with two closed loop optical fibers as claimed. However, Chawki et al. teach (fig. 1b) an optical network with two closed loop optical fibers for carrying the first optical signal in opposite directions, each node being coupled

to both optical fibers. Therefore, it would have been obvious for one of ordinary skill in the art at the time when the invention was made to apply the two-fiber loop taught by Chawki et al. to the network disclosed by Yamamoto to provide for greater security of the network.

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Takehana et al. (U.S. Patent US 6,081,359) disclosed a transmitting and receiving apparatus for wavelength division multiplex signal transmission.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Quan-Zhen Wang whose telephone number is (571) 272-3114. The examiner can normally be reached on 8:30 AM - 5:00 PM, Monday - Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jason Chan can be reached on (571) 272-3022. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should

you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

qzw

JASON CHAN
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600